

Pest Management News

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Letter #3

July 31, 2014

First Detection of Emerald Ash Borer in Arkansas

Joel W. Bard

Emerald Ash Borer (EAB) has been found in Clark, Hot Spring and Nevada counties as a result of a fifth year of a coordinated state-wide survey by the Arkansas State Plant Board and USDA APHIS Plant Protection and Quarantine in Arkansas. Traps continue to be collected by ASPB and PPQ so we won't know the full extent of infestation(s) for a few weeks. Once all traps have been collected the Arkansas State Plant Board and PPQ will determine what regulatory action may be needed to prevent further human-assisted spread of EAB. If a quarantine is implemented it would involve restricting commercial movement of articles capable of harboring live EAB which primarily includes all hardwood firewood, ash logs and ash nursery stock.

As is typical of first finds of EAB, it appears to have been in these counties for some time. Introduced via an infested article from one of the 24 EAB quarantined states, it takes several years for infestations to reach detectable levels.

This pest is native to Asia and was first found in the U.S. in the Detroit, MI area and is believed to have arrived in solid wood packing material often accompanying imported foreign origin cargo. It has resulted in the death or destruction of tens of millions of ash trees as it spread from its introduction point via infested firewood, logs, etc.



Click on the link below for more information on the emerald ash borer from USDA APHIS:

http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/planthealth?1dmy&urile=wcm%3apath%3a%2Faphis_content_library%2Fsa_our_focus%2Fsa_plant_health%2Fsa_domestic_pests_and_diseases%2Fsa_pests_and_diseases%2Fsa_insects%2Fsa_emerald_ash%2Fct_emerald_ash_borer

Chikungunya: An Emerging Mosquito-Borne Viral Disease in the U.S.

Kelly M. Loftin and John D. Hopkins

The first home-grown case of Chikungunya virus was recently confirmed in Florida. So far in 2014, about 300 imported cases (in 35 states) have been reported in the U.S. from people that have traveled in the Caribbean, South America, Pacific Islands or Asia. The Florida cases represent the first time people that have **not** traveled outside the U.S. have become infected with this mosquito-borne virus.

Chikungunya is an African (Makonde language) word that translates to “that which bends up” because people with the virus bend up with joint pain. Symptoms of Chikungunya begin about three to seven days following the bite of an infected mosquito and include fever and severe joint pain (especially in the hands and feet). Other symptoms may include joint swelling, muscle pain, rash and headache. Those infected with the virus usually improve within one week. Longer-term joint pain may occur in some patients. No vaccine is available to prevent Chikungunya, but fortunately, deaths from Chikungunya are rare.

Chikungunya is a mosquito-borne Alphavirus related to viruses that cause eastern and western equine encephalitis. The primary mosquito vectors are the yellow fever mosquito (*Aedes aegypti*) and the Asian tiger mosquito (*Aedes albopictus*). These two mosquito species are primarily daytime biters and breed in artificial containers. The virus strain spreading to the U.S. from the Caribbean appears to be more easily transmitted by *Aedes aegypti*. Chikungunya virus differs from other mosquito-borne viruses (such as West Nile Virus) in that birds are **not** involved in the virus life cycle. Instead, with chikungunya, the virus is transmitted from human to mosquito, mosquito to human. We may become infected when bitten by a mosquito that had previously fed on an infected human. The virus remains in the human system for five to seven days, thus, mosquitoes feeding on an infected person during this period can also become infected.

Chikungunya, first detected in Tanzania in the 1950's, was first found in the Americas in 2013. Expansion of Chikungunya in the Western hemisphere has spread rapidly, from 35,000 cases in May 2013, to over 400,000 cases in July of this year. Because competent vectors (*Aedes aegypti* and *Aedes albopictus*), amplifying hosts (humans) and the virus are present in the U.S., the potential to see more cases of Chikungunya in the U.S. is real.

Aedes aegypti and *Aedes albopictus* thrive in association with humans. Both species readily bite humans and breed in artificial containers (bird baths, animal watering dishes, flower pots, used tires, gutters, nearly anything that holds water) often associated with human habitation. In addition, both species have a relatively short flight range, seldom moving over a couple of hundred yards. Because of the characteristics, homeowners can have a significant impact in reducing the population of these

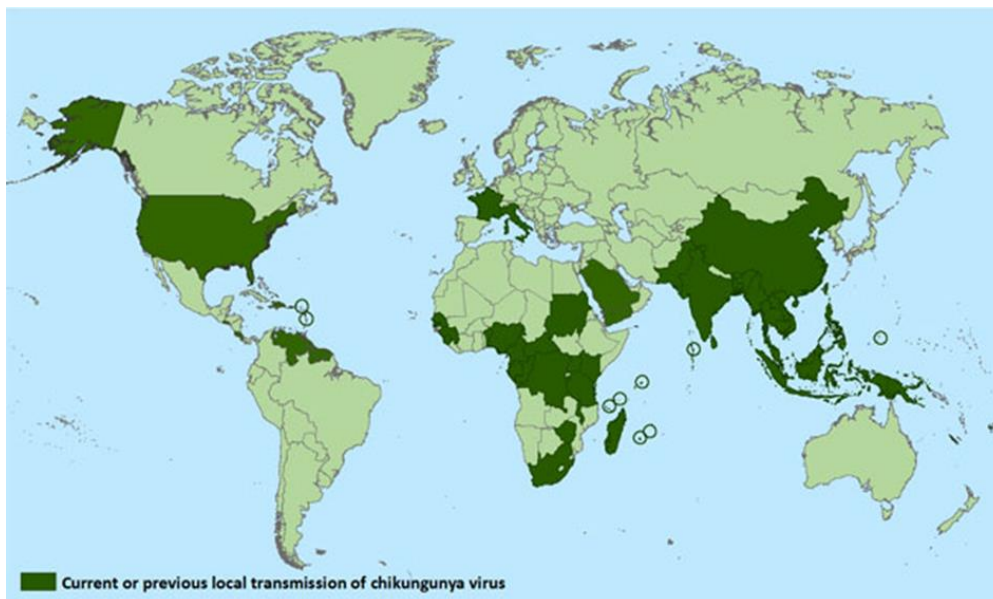
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mosquitoes. We should all check our yards weekly for water-filled containers and discard or recycle those that are unneeded. If empty containers must be stored, they should be covered, turned over or placed under a roof that prevents them from filling with water. Bird baths and pet-watering dishes should be cleaned and scrubbed weekly. Water from overflow dishes under potted plants or flower pots should be dumped frequently. Also, ensure that gutters are not holding water and that rain barrels are tightly covered with screening to prevent mosquito entry.

We can be easily exposed to mosquito bites while working or recreating in our yards. Precautions such as wearing long sleeve shirts, long pants, socks and shoes when mosquitoes are most active can reduce the number of mosquito bites. Use of repellents such as DEET, picaridin, oil of lemon eucalyptus or IR3535 only to exposed skin and/or clothing will provide protection from mosquito bites. Please follow all precautions on the label when using insect repellents or insecticides.



Worldwide distribution of Chikungunya (as of July 22, 2014). Source: CDC, assessed July 28, 2014.



Female yellow fever mosquito (*Aedes aegypti*).
<http://wwwnc.cdc.gov/travel/images/aedes-aegypti-mosquito.jpg>



Female Asian tiger mosquito (*Aedes albopictus*). Photo by Susan Ellis, Bugwood.org.

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Female *Aedes aegypti* (left) and *Aedes albopictus* (right).

When You are Traveling Avoid Hitchhiking Bed Bugs

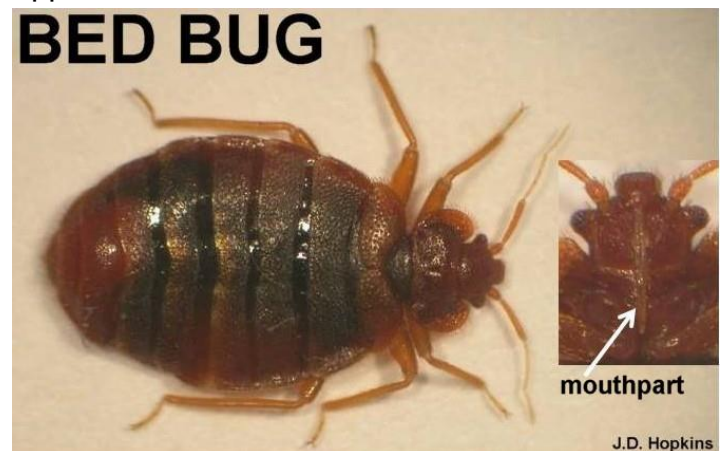
John D. Hopkins

According to the Centers for Disease Control and Prevention (CDC) and the U.S. Environmental Protection Agency (EPA), the United States is experiencing an alarming increase in the number of bed bug populations. Bed bugs do not fly, jump, or crawl from house to house, so they rely on the unwary individual to get around. As such, bed bugs are great hitchhikers. Whether you travel for business or you are taking a family vacation, you should take a few simple precautions to reduce your risk of exposure to this annoying pest, or worse still, bringing the hitchhikers into your home and allowing them to become established.



Adult bed bugs are about the size and shape of an apple seed, while immature stages (nymphs and eggs) are much smaller. These insects are mainly active at night, feeding on the blood of an unsuspecting victim (primarily humans) while they are sound asleep. Immature stages (nymphs) require a blood meal before molting (shedding their skin and developing into the next life stage). Adults (both male and female) take many blood meals throughout their life using their piercing sucking mouthparts.

Bed bug bites don't usually require serious medical attention unless they are scratched and become infected; however, they can cause a great deal of anxiety and restless nights. Reactions to



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bed bug bites vary from person to person, with some having little or no reaction at all, while others may experience itchy, red welts or localized swelling within a few hours to days after being bitten.

To cut your risk of exposure to bed bugs while traveling check your motel or hotel room for signs of the pest before settling in. Start by storing your suitcases in the clean, dry bathtub or leaving your luggage just outside the room. Then conduct a thorough inspection of the room for the presence of or signs of a bed bug infestation:

1. **A sweet, musty odor:** If you notice a sweet, musty odor in your hotel room, cruise ship cabin, or other sleeping area, there may be a heavy bed bug infestation in the room. Bed bugs produce chemicals to help them communicate, although not everyone will notice the smell. If something smells off, don't hesitate to ask for another room.
2. **Specks of blood on bedding, mattresses, or upholstered furniture:** Look carefully at your blankets, sheets and mattress pads, and then check the mattress and box spring. If there specks of blood anywhere, especially near the seams, there could be a bed bug infestation. You should also check for specks of blood on all upholstered furniture, including couches and headboards.
3. **Exoskeletons:** Immature bed bug nymphs shed their outer skin (molt) as they develop into the next life stage. If you see these shell-like remains on the mattress, mattress pad or beneath couch cushions, then a bed bug infestation is likely.
4. **Tiny, blackish specks:** If you see blackish specks on the bedding, mattress, or headboard, it could be bed bug excrement (fecal spots/voided blood meal).
5. **Eggs:** After mating, female bed bugs lay white, oval eggs in cracks and crevices. Keep in mind that these will be small (egg length approximately equal to the thickness of a dime).



After inspecting your room and the luggage rack, and confirming to the best of your ability that no bed bugs are present, it is OK to move your luggage into the room. Never set your suitcase on the bed or other cloth-covered furniture. Use the luggage rack or a hard surface such as a desk.

Once you return home, unpack immediately in a location other than your bedroom, such as the bathroom or garage. Then wash and dry all your clothing. Heat ($\geq 122^{\circ}\text{F}$) effectively kills all life stages of the bed bug. Put items that can be laundered into the dryer on medium high heat for at least 20

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minutes, then wash and dry them again to ensure all pests were eliminated. It's also wise to take your luggage outside and clean the interior and pockets to be sure no hitchhiking bed bugs are present.

A "[How to Check for Bed bugs](#)" video is posted to the American Academy of Dermatology's website.

The American Academy of Dermatology was founded in 1938 and is headquartered in Schaumburg, Ill. The organization is the largest, most influential, and most representative of all dermatologic associations. With a membership of more than 17,000 physicians worldwide, the Academy is committed to: advancing the diagnosis and medical, surgical and cosmetic treatment of the skin, hair and nails; advocating high standards in clinical practice, education, and research in dermatology; and supporting and enhancing patient care for a lifetime of healthier skin, hair and nails. For more information, contact the Academy at 1-888-462-DERM (3376) or www.aad.org.



Excellence In Dermatology™

New Product Registered for Ornamental Pests

John D. Hopkins

Dow AgroSciences has received federal registration and state registration in AR for XXpire™ WG insecticide, a product for use in ornamentals that combines two active ingredients, spinetoram (a mixture of spinetoram-J and spinetoram-L) and the new active ingredient, Isoclast™ (sulfoxaflor), a brand-new class of insecticide chemistry. This material is registered for use to control or suppress listed pests such as aphids, leaf feeding beetles, lepidopterous larvae, foliage feeding worms, lace bugs, mealybugs, plant bugs, thrips, whiteflies, and certain scales in ornamentals (herbaceous and woody) in greenhouses, non-residential landscapes, and nurseries (including conifer seed orchards). XXpire™ WG controls both chewing and sap-feeding species.



XXpire™ WG offers two modes of action and provides excellent knockdown of pests. Isoclast is a recently registered active ingredient and the sole member of the sulfoximine class of insect control agents. Spinetoram is a spinosyn insecticide and offers residual activity.

The product is scheduled to be available this fall. Click on the XXpire™ WG logo above to view the current label.

Forage Pest Update

Kelly M. Loftin

Fall armyworm

We have been receiving many more reports, from most regions of the state, concerning fall armyworms in pastures and hayfields. As you might recall from the last issue of the Pest Management Newsletter, we began finding them earlier than normal this year. In most cases, the number per square foot is well over three. We are seeing over 10 per square foot and in some cases

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many more than 20. Also, in many cases the worms are of mixed sizes indicating overlapping generations. Normally if you find an average of 3 or more per square foot, insecticide treatment is warranted. Also remember, cutting for hay is often a good alternative to insecticide application if the grass is mature enough to harvest. Please remind your producers to scout for fall armyworms, especially those still needing to put up additional hay. Fortunately for many producers, ample hay has already been harvested.

For producers considering insecticide applications, per-acre insecticide cost will vary from as low as \$3.00 up to over \$10.00. When calculating cost, always consider the cost per acre and not the cost per gallon of product. Also consider residual activity of the product, especially, if you are seeing an overlapping population (all sizes of fall armyworm caterpillars) and heavy armyworm pressure. Remember, pyrethroid insecticides such as Karate® (lambda-cyhalothrin), Mustang Max® (zeta-cypermethrin) and Baythroid XL (beta-cyfluthrin) have shorter-duration residual activity. In contrast, other products such as Prevathon® (chlorantraniliprole), Besiege® (chlorantraniliprole and lambda-cyhalothrin) and Intrepid® (methoxyfenozide) do have longer-duration residual activity and can reduce the number of applications necessary to produce a hay crop.

For more information on fall armyworms, the June 2014 issue of Pest Management News provided information on scouting and insecticide options. Additional information on armyworms can be found in “Managing Armyworms in Pastures and Hayfields” and is available at: <http://www.uaex.edu/publications/PDF/FSA-7083.pdf>.

Bermudagrass stem maggot

We have begun to see bermudagrass stem maggots again this year. As you may recall from Pest Management Newsletter articles last year, this potential pest is a native of south Asia. In the U.S. it was first discovered in Georgia in 2010 and is currently found in other southeastern states as well as Oklahoma and Texas. Information on its biology, the damage it causes and control methods is very limited. Much of the work with this fly has been conducted by entomologists at the University of Georgia. To date, economic thresholds and yield loss data have not been established for this pest. Much of the information provided below appeared in last year's Pest Management Newsletter, however, timing of the insecticide applications have been slightly modified.



Fig. 1. Typical damage caused by the bermudagrass stem maggot. Note the dead upper leaves.

Damage caused by the bermudagrass stem maggot results from larval stages (maggots) feeding in the shoot causing the top two or three leaves to die (Fig. 1). Lower leaves remain alive and unaffected by the maggot's feeding. Because of the death of the top couple of leaves, the plant (and field, if heavily infested) may exhibit a

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frosted appearance (Fig. 2.). The life cycle from egg to adult requires about three weeks. The adult female fly will lay eggs on the bermudagrass stem near a node. The maggot will hatch from the egg, crawl up to toward the last plant node (where the leaf blade emerges from the stem) and burrow into the shoot and begin feeding. Usually by the time the top leaves have died, the maggots have exited the stem and pupated on the ground. With such as short generation period, multiple generations occur and populations tend to increase later in the season causing an accumulation of damage.



Fig. 2. Bermudagrass stem maggot damage.

The adult fly is small (~1/8 inch long) and yellow colored with four

prominent black spots on the abdomen (Fig. 3). The maggot (larva) is also yellowish colored and about 1/8 inch in length when fully mature (Fig. 4).



Fig. 3. Bermudagrass stem maggot adult. Note the four black spots on its abdomen.



Fig. 4. Bermudagrass stem maggot larvae.

Although yield data and economic threshold data is very limited, experiences in other states provide basic guidelines to consider. In general, this pest is less of a problem in coarse stemmed bermudagrass varieties (Tifton 85 and others), bermudagrass that is grazed or bermudagrass that is

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baled for cattle hay. In grazed pastures, cattle eat the fly eggs and maggots along with the grass, lessening population build up. Bermudagrass stem maggots may become an economic pest in finer stemmed varieties (common, Coastal, Alicia and others) that are baled for horse hay, especially later in the season after the population builds. The issue with horse hay is that the dead top leaves cause an unsightly appearance to some in the horse hay market, resulting in rejected hay.

Growing conditions appear to influence the amount of damage caused by the bermudagrass stem maggot. Impact on yield is lessened when soil and moisture conditions allow for normal rapid growth. In this situation, loss of a few upper leaves would have little impact on yield. In situations where growth is limited by poor soil conditions or lack of moisture, yield losses are more likely to occur. Researchers believe this is because the slow growth rate allows egg-laying and maggot development to occur earlier and more often in the grass growth cycle. Also, in heavy infestations, regrowth after cutting will be slowed substantially when a greater percentage of stems are damaged.

Management options for the bermudagrass stem maggot include harvesting and in some cases insecticide application. Cutting for hay is usually recommended if significant damage is identified within one week of normal harvest. When damage occurs from one to three weeks after harvest and is substantial, yield may be compromised. In this situation, harvest may be necessary to prevent further stunting and significant yield loss. Pyrethroid insecticides labeled for use in hay fields appear to be the least expensive and most effective insecticide. These insecticide treatments should be applied from 7 to 10 days after cutting. This treatment interval is important because the grass has resprouted and adults emerging from larvae that pupated at the time of cutting should have emerged and are ready to lay eggs. The pyrethroid insecticide application is aimed at the egg-laying adults and less effective once the bermudagrass is thick. This is because the insecticide cannot penetrate the canopy where adults are often found. So far, insecticide applications aimed at maggots developing in the stem have not been effective.

Pest Alert: Sugarcane Aphid in Grain Sorghum (Milo)

Nick Seiter

Recently, a new pest of grain sorghum that has been causing problems for growers in Texas, Louisiana, Oklahoma, and Mississippi was found in Arkansas. The sugarcane aphid (*Melanaphis sacchari*) was found in Ashley and Chicot Counties on June 27, in Desha County on July 1, and in Phillips County (Elaine area) on July 11. This pest is also referred to as the “white” sugarcane aphid to distinguish it from the yellow sugarcane aphid, a mild to moderate pest of sorghum that seldom requires treatment. Wingless sugarcane aphids have a pale yellow to whitish coloration and dark cornicles, the “stove pipe” structures located at their rear end (Figure 1). The winged, or “alate,” sugarcane aphids that first migrate into fields are darker in coloration (Figures 2 and 3). Sugarcane aphids give birth to live young rather than laying eggs, and do not need to mate to reproduce. They can multiply quite rapidly, covering the undersides of leaves (Figure 4) before they move to other parts of the plant. Damage symptoms include the presence of sticky honeydew (the sugary excrement of aphids and other sap-feeding insects), as well as yellow to reddish-brown leaf discoloration.

The sugarcane aphid had previously been observed in the continental United States on sugarcane, but in 2013 it was reported reaching large populations on grain sorghum in Texas, Louisiana,

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Figure 1. Wingless sugarcane aphids. Note dark, tube-like structures on the rear end, known as cornicles (circled in red for emphasis). These can be seen with a little magnification using a hand lens or, in this case, a phone camera. These are less visible on younger aphids (for example, the two tiny, whitish aphids in this picture among the larger yellow aphids).



Figure 2. A winged aphid (larger and darker than the others) with its wingless offspring. These winged aphids (or “alates”) are the first to colonize the plant.



Figure 3. Several winged aphids and their wingless offspring.



Figure 4. The underside of a sorghum leaf covered with wingless aphids. Some honeydew can be seen as a slightly darkened area at the base of the leaf (right side of the picture). Honeydew has a sticky texture similar to a thin layer of syrup; during scouting, you may feel it on your fingers before you see it.

Oklahoma, and Mississippi. Heavy infestations can kill early vegetative sorghum plants and reduce grain yield indirectly due to reductions in plant vigor. However, the major concern from this insect is the potential for harvest difficulties caused by the large amounts of sticky honeydew (the sugary

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excrement of aphids and other sap-feeding insects) that result from heavy infestations. Reports from previously affected areas indicate that yield losses from harvest difficulties caused by this pest can reach up to 50% in extreme cases. In addition, large amounts of honeydew can result in additional equipment cleaning and repair costs.

Management of this insect could pose a challenge, as it has the potential to rapidly multiply, there are limited options for chemical control, and it has only recently become a problem in sorghum in the U.S. A section 18 label exemption has been granted in Arkansas for Transform WG at a rate of 0.75-1.5 oz. of product per acre for control of sugarcane aphid. This product has provided good control in trials conducted in Texas and Louisiana, and has a favorable pre-harvest interval (PHI) of 14 days. Note that the section 18 label allows a maximum of 2 applications. Efficacy of dimethoate and chlorpyrifos (Lorsban), which are labeled for foliar use against other aphid species in sorghum (greenbug, corn leaf aphid, and yellow sugarcane aphid), has been mixed at best, and the long PHIs of these materials will limit their usefulness in preventing honeydew buildup after heading. The pyrethroids that are often used for midge control do not provide effective control of sugarcane aphid, and may flare aphid outbreaks by eliminating natural enemies.

Unfortunately, there is no research-based action threshold for sugarcane aphid in sorghum at this time. Be sure to monitor your fields carefully, as this insect can multiply rapidly and is unlikely to be distributed evenly throughout the field. Sugarcane aphids are usually found on the underside of leaves, but reports from our colleagues indicate they will go to other parts of the plant (including the grain head) if populations reach high levels. When making treatment decisions, remember that the major concern after heading is the buildup of honeydew, which needs to be present in large amounts to cause harvest difficulties. If moderate to large colonies of aphids are easily found in your field, and sticky honeydew is starting to appear, it is probably time to spray. If small colonies or individual aphids are found sporadically, wait and continue to monitor the field. Please be on the lookout for more updates as the situation with this insect continues to develop.

References/Further Reading:

Sugarcane Aphid: A New Pest of Soybean. Publication ENTO-035, Feb. 2014. Texas A&M AgriLife Extension (link: <http://denton.agrilife.org/files/2013/08/ENTO-035-The-Sugarcane-Aphid-2014.pdf>)

Section 18 Notice of Specific Exemption for the Use of Transform WG Insecticide for Control of Sugarcane Aphid in Sorghum. Arkansas State Plant Board. July 2, 2014. (link: <http://plantboard.arkansas.gov/Pesticides/Documents/14AR03%20Section%2018%20Emergency%20Exemption%20Transform%20WG%20%28sulfoxaflor%29.pdf>).

Reports from Arkansas Cooperative Extension Service county agents: Robert Goodson (Phillips County), Wes Kirkpatrick (Desha County), Kevin Norton (Ashley County), Gus Wilson (Chicot County).

Gray Leaf Spot: A Common Fungal Disease of Grasses

Sherrie E. Smith

Gray Leaf Spot, caused by *Pyricularia grisea* is a common fungal leaf disease of many grass species, including rice (blast), wheat, barley, pearl millet, ornamental and turf grasses. St. Augustine is particularly susceptible. Epidemics occur in summer and can continue until frost. Gray leaf spot is most severe on lawns that have been over fertilized with quick release nitrogen and on lawns with drought and soil compaction stress. Extended periods of leaf wetness caused by watering at night can also play a role in disease development and severity. Shaded areas of the lawn usually are more severely affected.

Symptoms are oval to elongated gray to brown spots with brown or purple borders. The youngest leaves often take on a fish hook shape. Disease is most evident in the warm months of August and September. As individual leaves die the turf takes on a thin appearance similar to drought damage. Fungicides such as Heritage, Compass, Banner MAXX, Bayleton, Green Light Systemic Fungicide, Green Light Fung-Away, and Bonide Fung-onil Lawn Disease Control are effective against Gray leaf spot.

Gray Leaf Spot (*Pyricularia grisea*) Symptoms on St. Augustinegrass leaf blades. (Photo by Sherrie Smith University of Arkansas Cooperative Extension)



Gray Leaf Spot (*Pyricularia grisea*) Symptoms on St. Augustinegrass. (Photo by Sherrie Smith University of Arkansas Cooperative Extension)



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Name That Weed

Bob Scott

This month's weed is a perennial woody vine that may reach 40 feet or more in length. Leaves are opposite and composed of several similar leaflets also arranged oppositely from one another (pinnately compound). A single leaf may contain 7-15 leaflets that are 1-3 inches long, 1/2 to 1 1/2 inches wide, and coarsely toothed (1). Stems become woody, and may be either trailing along the ground or climbing on other vegetation (5). Stems root where they touch the ground and also produce aerial roots that aid in climbing. Showy red-orange flowers (2-3 inches long) produce a long, narrow capsule containing many winged seed.

Occasionally viewed as an ornamental it can become very invasive in urban or landscape settings and then become viewed as a weed.

Be the first to email me (bscott@uaex.edu) with one of its two accepted common names and win a prize!



To The Readers

Please offer any suggestions for Urban or Livestock Integrated Pest Management topics (insect pests, plant diseases, weed problems, wildlife control problems) that you would like to see – **OR** – feel free to submit an article that you have prepared. Kelly and I will be glad to include it (subject to editing). Send feedback to jhopkins@uaex.edu or kloftin@uaex.edu

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